

Exploring Aeronautics			
2006 Science			
Program of Studies			
Kentucky Science			
Grade 5			
Activity/Lesson	State	Standards	
Fundamentals of Aeronautics (145-176)	KY	SCI.5.SC-5-MF-U-2	the more mass an object has, the less effect a given force will have.
Fundamentals of Aeronautics (145-176)	KY	SCI.5.SC-5-MF-S-4	predict and support with evidence/justification, changes in the motion of an object related to its mass or the amount of force acting on it
Airplane Control(209-256)	KY	SCI.5.SC-5-MF-U-1	predictions and/or inferences about the direction or speed of an object can be made by interpreting graphs, charts or descriptions of the object's motion.
Tools of Aeronautics(257-326)	KY	SCI.5.SC-5-EU-S-8	explain why scale models are important tools for understanding a number of phenomena (e.g., solar system, watersheds, earth's atmosphere) but are not always easy to construct or require trade-offs in other aspects of the model (e.g. distance vs. size)
How an Airplane Flies	KY	SCI.5.SC-5-MF-U-2	the more mass an object has, the less effect a given force will have.
How an Airplane Flies	KY	SCI.5.SC-5-MF-S-2	create and interpret graphical representations in order to make inferences and draw conclusions about the motion of an object
The Tools of Aeronautics	KY	SCI.5.SC-5-EU-S-8	explain why scale models are important tools for understanding a number of phenomena (e.g., solar system, watersheds, earth's atmosphere) but are not always easy to construct or require trade-offs in other aspects of the model (e.g. distance vs. size)
Science of Flight	KY	SCI.5.SC-5-STM-S-3	keep accurate records of investigations (procedures, data) in order to support or dispute conclusions
Science of Flight	KY	SCI.5.SC-5-MF-U-2	the more mass an object has, the less effect a given force will have.
Science of Flight	KY	SCI.5.SC-5-MF-S-1	use observations and appropriate tools (e.g., timer, meter stick, balance, spring scale) to explore the relationship between force and mass
Science of Flight	KY	SCI.5.SC-5-MF-S-4	predict and support with evidence/justification, changes in the motion of an object related to its mass or the amount of force acting on it
Integrating with Aeronautics	KY	SCI.5.SC-5-MF-U-1	predictions and/or inferences about the direction or speed of an object can be made by interpreting graphs, charts or descriptions of the object's motion.
Integrating with Aeronautics	KY	SCI.5.SC-5-MF-S-1	use observations and appropriate tools (e.g., timer, meter stick, balance, spring scale) to explore the relationship between force and mass

Scientific Method(124-144)	KY	SCI.5.SC-5-STM-U-5	results of investigations are seldom exactly the same, but if the results vary widely, then it is necessary to figure out why they differ.
Scientific Method(124-144)	KY	SCI.5.SC-5-STM-S-2	work individually and with others to design and conduct fair tests to safely investigate properties of matter, such as boiling point, density and solubility
Scientific Method(124-144)	KY	SCI.5.SC-5-STM-S-3	keep accurate records of investigations (procedures, data) in order to support or dispute conclusions
Scientific Method(124-144)	KY	SCI.5.SC-5-STM-S-4	use student-generated questions about the properties of matter to drive inquiry-based learning experiences
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<b>Program of Studies</b>			
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<b>Grade 6</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Fundamentals of Aeronautics (145-176)	KY	SCI.6.SC-6-MF-U-2	when any force acts on an object, the change in speed or direction depends on the size and direction of the force.
Fundamentals of Aeronautics (145-176)	KY	SCI.6.SC-6-MF-S-2	use graphical and observational data to make inferences, predictions and draw conclusions about the motion of an object as related to the mass or force involved
Fundamentals of Aeronautics (145-176)	KY	SCI.6.SC-6-MF-S-4	represent the motion of objects and their response to unbalanced forces in a variety of ways
The Tools of Aeronautics	KY	SCI.6.SC-6-STM-S-8	plan, present and support information from investigations using a variety of modes
Science of Flight	KY	SCI.6.SC-6-STM-S-7	investigate how important scientific advances have resulted from unexpected observations or experimental results
Science of Flight	KY	SCI.6.SC-6-MF-S-2	use graphical and observational data to make inferences, predictions and draw conclusions about the motion of an object as related to the mass or force involved
Science of Flight	KY	SCI.6.SC-6-ET-S-5	experimentally investigate the relationship between temperature and heat transfer in closed systems
Integrating with Aeronautics	KY	SCI.6.SC-6-MF-S-2	use graphical and observational data to make inferences, predictions and draw conclusions about the motion of an object as related to the mass or force involved
Scientific Method(124-144)	KY	SCI.6.SC-6-STM-S-7	investigate how important scientific advances have resulted from unexpected observations or experimental results
Scientific Method(124-144)	KY	SCI.6.SC-6-MF-U-3	mechanical systems must be designed to take forces such as friction into account. Friction and/or the heat produced by it can have significant effects on the system.

Scientific Method(124-144)	KY	SCI.6.SC-6-MF-S-2	use graphical and observational data to make inferences, predictions and draw conclusions about the motion of an object as related to the mass or force involved
Scientific Method(124-144)	KY	SCI.6.SC-6-BC-U-3	scientists vary widely in what they study and how they do their work. While there is no fixed set of steps they follow, the basic process of science involves collecting relevant evidence, logical reasoning and the use of imaginative thinking in constructing explanations for what they observe.
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<b>2006 Science</b>			
<b>Program of Studies</b>			
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<b>Grade 7</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Fundamentals of Aeronautics (145-176)	KY	SCI.7.SC-7-MF-U-1	an object remains at rest or maintains a constant speed and direction of motion unless an unbalanced force acts on it (inertia).
Fundamentals of Aeronautics (145-176)	KY	SCI.7.SC-7-MF-U-2	forces acting against each other can be balanced, canceling each other out and having no net effect.
Fundamentals of Aeronautics (145-176)	KY	SCI.7.SC-7-MF-S-2	test the cause and effect relationship between straight-line motion and unbalanced forces
Fundamentals of Aeronautics (145-176)	KY	SCI.7.SC-7-MF-S-3	investigate balanced and unbalanced forces and their effect on objects and their motion
Fundamentals of Aeronautics (145-176)	KY	SCI.7.SC-7-MF-S-4	make inferences and draw conclusions about the motion of objects, and predict changes in position and motion as related to the mass or force
How an Airplane Flies	KY	SCI.7.SC-7-MF-U-1	an object remains at rest or maintains a constant speed and direction of motion unless an unbalanced force acts on it (inertia).
How an Airplane Flies	KY	SCI.7.SC-7-MF-U-2	forces acting against each other can be balanced, canceling each other out and having no net effect.
How an Airplane Flies	KY	SCI.7.SC-7-MF-S-3	investigate balanced and unbalanced forces and their effect on objects and their motion
Science of Flight	KY	SCI.7.SC-7-STM-S-3	generate investigable questions and conduct experiments or non-experimental research to address them
Science of Flight	KY	SCI.7.SC-7-MF-U-2	forces acting against each other can be balanced, canceling each other out and having no net effect.
Science of Flight	KY	SCI.7.SC-7-MF-S-2	test the cause and effect relationship between straight-line motion and unbalanced forces
Science of Flight	KY	SCI.7.SC-7-MF-S-3	investigate balanced and unbalanced forces and their effect on objects and their motion

Science of Flight	KY	SCI.7.SC-7-MF-S-4	make inferences and draw conclusions about the motion of objects, and predict changes in position and motion as related to the mass or force
Science of Flight	KY	SCI.7.SC-7-MF-S-5	calculate work as the product of force and distance moved in the direction of the force
Integrating with Aeronautics	KY	SCI.7.SC-7-MF-S-2	test the cause and effect relationship between straight-line motion and unbalanced forces
Integrating with Aeronautics	KY	SCI.7.SC-7-MF-S-3	investigate balanced and unbalanced forces and their effect on objects and their motion
Integrating with Aeronautics	KY	SCI.7.SC-7-MF-S-4	make inferences and draw conclusions about the motion of objects, and predict changes in position and motion as related to the mass or force
Scientific Method(124-144)	KY	SCI.7.SC-7-STM-U-5	investigations are conducted for different reasons, including to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.
Scientific Method(124-144)	KY	SCI.7.SC-7-STM-S-3	generate investigable questions and conduct experiments or non-experimental research to address them
Scientific Method(124-144)	KY	SCI.7.SC-7-MF-U-4	technology used to gather data enhances accuracy and allows scientists to analyze and quantify results of investigations.
Scientific Method(124-144)	KY	SCI.7.SC-7-MF-S-4	make inferences and draw conclusions about the motion of objects, and predict changes in position and motion as related to the mass or force
Scientific Method(124-144)	KY	SCI.7.SC-7-BC-S-4	compare the results from a variety of investigations (based on similar hypotheses) to identify differences between their outcomes/conclusions and propose reasonable explanations for those discrepancies
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<b>Program of Studies</b>			
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<b>Grade 8</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Science of Flight	KY	SCI.8.SC-8-EU-S-4	discuss and identify the strengths and limitations of a variety of physical and conceptual scientific models